

**Notice of Allowability**

Application No.

10/033,649

Examiner

Martin Lerner

Applicant(s)

KIM ET AL.

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2654

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Request for Continued Examination filed 31 May 2005.
2. ☒ The allowed claim(s) is/are 1 to 7.
3. ☒ The drawings filed on 27 December 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 06/02/2005
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other Foreign Priority.

### EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Regarding independent claim 1, the prior art of record does not disclose or reasonably suggest a memory-based vector quantizer and a memoryless vector quantizer, where a DC component is removed from an LSP coefficient vector, a switch selects a quantized vector with less quantized error, and then a DC component is added to the selected quantized vector. *Yoon et al.* is the closest prior art of record, disclosing removing a DC component from an LSP, and adding the DC component to a target vector and an error code book. (Column 5, Lines 56 to 66) However, the prior art of record does not disclose or suggest selecting a quantized vector with less quantized error from a memory-based vector quantizer and a memoryless vector quantizer, where a DC component is removed before quantizing. Applicants' Specification, ¶[0021], discloses that the quantizer has an advantage in that it provides the characteristics of both the memory-based split quantizer for fine quantization and the memoryless split quantizer for reducing the number of outliers.

Regarding independent claim 6, the prior art of record does not disclose or reasonably suggest an LSF quantization method, where a DC component is removed from an LSF coefficient vector, a DC-component-removed LSF coefficient vector is predicted using a primary auto-repressive (AR) predictor, pyramid-vector-quantizing a prediction error, selecting a quantized vector that has less quantized error, and adding the DC component to the selected quantized vector. *Yoon et al.* discloses removing a

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DC component from an LSP, and adding the DC component to a target vector and an error code book. (Column 5, Lines 56 to 66) *Pan* teaches it is known to apply pyramidal vector quantization to LSP coding. (Abstract) However, a combination of *Yoon et al.* and *Pan* still omits any suggestion of predicting a DC-component-removed LSF coefficient vector with a primary auto-regressive predictor. Applicants' Specification, ¶[0034], suggests an advantage is obtained by using a split vector quantizer and a safety net to greatly reduce the size of the memory and the computational complexity for retrieval of code books without a deterioration of spectral distortion.

#### **FOREIGN PRIORITY UNDER 35 U.S.C. 119**

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### **CONCLUSION**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602. The fax phone

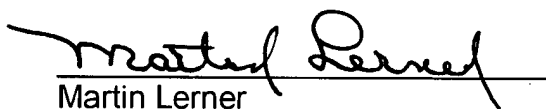
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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ML

6/23/05

  
Martin Lerner  
Examiner  
Group Art Unit 2654